

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
**WO 2005/058976 A2**

(51) International Patent Classification<sup>7</sup>:

**C08B 37/00**

(21) International Application Number:

PCT/IB2004/004128

(22) International Filing Date:

15 December 2004 (15.12.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

MI2003A002498

17 December 2003 (17.12.2003) IT

(71) Applicant (*for all designated States except US*): **GLY-CORES 2000 S.R.L.** [IT/IT]; Via Mac Mahon, 43, I-20155 Milan (IT).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **ORESTE, Pasqua, Anna** [IT/IT]; Via Mac Mahon, 43, I-20155 Milan (IT). **ZOPPETTI, Giorgio** [IT/IT]; Via Mac Mahon, 43, I-20155 Milan (IT).

(74) Agent: **SANTORO, Tiziana**; Marietti, Gislon e Trupiano S.r.l., Via Larga, 16, I-20122 Milan (IT).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

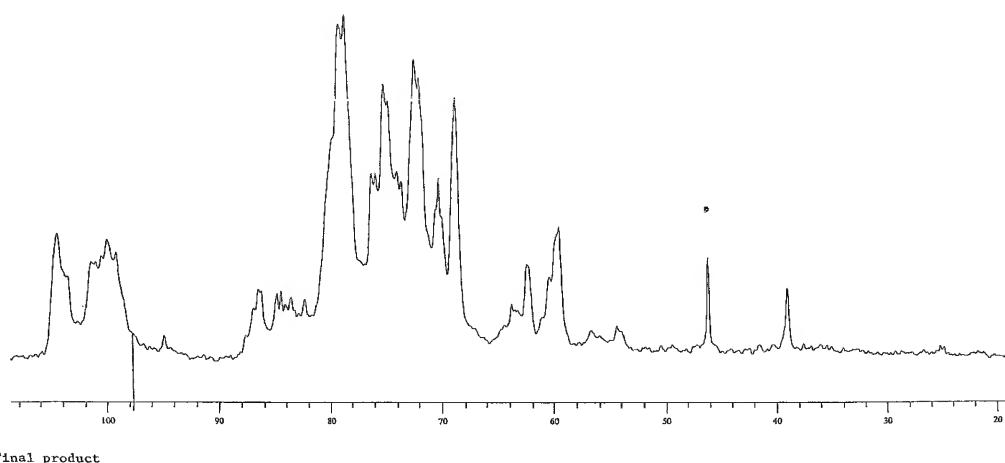
(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LOW MOLECULAR WEIGHT POLYSACCHARIDES HAVING ANTHROMBOTIC ACTIVITY



Final product

**WO 2005/058976 A2**

(57) Abstract: Novel depolymerized-LMWepiK5-N,O-sulfates obtainable starting from a LMW epiK5-N-sulfate prepared by nitrous depolymerization of an epiK5-N-sulfate or by C5-epimerization of a LMW-K5-N-sulfate obtained by nitrous depolymerization of a KS-N-sulfate. A process consists of submitting the starting depolymerized-LMW-epiK5-N-sulfate to four steps: a O-versulfation, a partila O-desulfation, a 6-O-sulfation and a N-sulfation. The new depolymerizedLMWepiK5-N,O-sulfates present a di- or trisulfated 2,5-anhydromannitol unit at the reducing end of the majority of its chains, have a content of iduronic acid of 40-60%, a sulfation degree of from 2.3 to 2.9 and a mean molecular weight of from about 1,500 to about 12,000. They exhibit a good antithrombotic activity with a low pro-hemorrhagic risk.